

AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A computer-implemented method, comprising:
 - downloading, at a remote site, an application to run as a remote application on a virtual machine located on ~~a remote~~ the remote site;
 - modifying the remote application at the remote site to generate a modified remote application;
 - ~~changing a run mode of the modified remote application from a normal mode to a debugging mode;~~
 - requesting, from the remote site, ~~the running of a local site to run~~ a debugging system on the modified remote application running on the remote site, the running of the debugging system being done at a local site;
 - running the debugging system on the local site, the local site being separated from the remote site by at least one firewall;
 - ~~storing data on the local site, the data including a local copy of the application as originally downloaded to run on the remote site; and~~
 - ~~making it appear to the debugging system that the modified remote application is running on the local site instead of the remote site by:~~
 - establishing a communication link between a first router located on the local site and a second router located on the remote site;
 - using the communication link between the first and second routers to establish communication between the debugging system and the virtual machine;
 - receiving a timestamp indicating when the remote application was last modified at the remote site;
 - determining, based on receiving the timestamp, whether a local copy of the remote application is present on the local site;

retrieving, if it is determined that the local copy is not present on the local site, the local copy from the remote site;

determining, based on receiving the timestamp, whether more than one local copy is stored on the local site;

selecting a matching local copy from the more than one local copy based on the received timestamp;

using the received timestamp to determine that determining whether the local copy is not is up to date with respect to the remote application based on the received timestamp; application;
and

if it is determined that the local copy is not up to date:

determining (i) comparing, on the remote site, the local copy as originally downloaded with the remote application to establish delta information that identifies differences between the local copy as originally downloaded with the remote application and the modified remote application, application, (ii)

retrieving the delta information from the remote site, site, (iii)

using the retrieved delta information to alter the local copy to match the modified remote application, and application, and (iv)

loading the retrieved, matched or altered local copy into the debugging system;
and

debugging, using the communication link between the first and second routers, the loaded local copy of the remote application at the local site, further comprising:

sending commands from the local site to the remote application between the first and second routers, and

receiving, via the first and second routers, run-time data and state information about the remote application at the local site based on sending the commands.

2. (Original) The method of claim 1, wherein the remote application is a component of a larger application that is running on the virtual machine.
3. (Original) The method of claim 1, wherein the virtual machine is a Java virtual machine.

4. (Original) The method of claim 1, wherein the at least one firewall comprises a first firewall protecting the local site and a second firewall protecting the remote site.

5. (Cancelled)

6. (Cancelled)

7. (Currently Amended) A computer program product, tangibly embodied in a machine-readable storage device, the computer program product being operable to cause data processing apparatus to:

download, at a remote site, an application to run as a remote application on a virtual machine located on the remote ~~a remote~~ site;

modify the remote application at the remote site to generate a modified remote application;

~~change a run mode of the remote application from a normal mode to a debugging mode;~~

request, from the remote site, ~~the running of a local site to run~~ a debugging system on the modified remote application running on the remote site, ~~the running of the debugging system being done at a local site;~~

run the debugging system on the local site, the local site being separated from the remote site by at least one firewall;

~~store data on the local site, the data including a local copy of the application as originally downloaded to run on the remote site; and~~

~~make it appear to the debugging system that the modified remote application is running on the local site instead of the remote site by:~~

establish ~~establishing~~ a communication link between a first router located on the local site and a second router located on the remote site;

use ~~using~~ the communication link between the first and second routers to establish communication between the debugging system and the virtual machine;

receive ~~receiving~~ a timestamp indicating when the remote application was last modified at the remote site;

determine, based on receiving the timestamp, whether a local copy of the remote application is present on the local site;

retrieve, if it is determined that the local copy is not present on the local site, the local copy from the remote site;

determine, based on receiving the timestamp, whether more than one local copy is stored on the local site;

select a matching local copy from the more than one local copy based on the received timestamp;

using the received timestamp to determine that determining whether the local copy is not is up to date with respect to the remote application based on the received timestamp; application;
and

if it is determined that the local copy is not up to date:

determine (i) comparing, on the remote site, the local copy as originally downloaded with the remote application to establish delta information that identifies differences between the local copy as original downloaded with the remote application and the modified remote application, application, (ii)

retrieve retrieving the delta information from the remote site, site, (iii)

use using the retrieved delta information to alter the local copy to match the modified remote application, and application, and (iv)

load loading the retrieved, matched or altered local copy into the debugging system; and

debug, using the communication link between the first and second routers, the loaded local copy of the remote application at the local site, further comprising:

sending commands from the local site to the remote application between the first and second routers, and

receiving, via the first and second routers, run-time data and state information about the remote application at the local site based on sending the commands.

8. (Original) The product of claim 7, wherein the remote application is a component of a larger application that is running on the virtual machine.

9. (Original) The product of claim 7, wherein the virtual machine is a Java virtual machine.
10. (Original) The product of claim 7, wherein the at least one firewall comprises a first firewall protecting the local site and a second firewall protecting the remote site.
11. (Original) The product of claim 7, wherein the router is an SAProuter.
12. (Cancelled)
13. (Cancelled)
14. (Currently Amended) A data processing system, comprising:
 - means for downloading, at a remote site, an application to run as a remote application on a virtual machine located on ~~a remote~~ the remote site;
 - means for modifying the remote application at the remote site to generate a modified remote application;
 - ~~means for changing a run mode of the remote application from a normal mode to a debugging mode;~~
 - means for requesting, from the remote site, ~~the running of a local site to run~~ a debugging system on the modified remote application running on the remote site, the running of the debugging system being done at a local site;
 - means for running the debugging system on the local site, the local site being separated from the remote site by at least one firewall;
 - ~~means for storing on the local site a local copy of the application as originally downloaded to run on the remote site; and~~
 - ~~means for making it appear to the debugging system that the modified remote application is running on the local site instead of the remote site by:~~
 - means for establishing a communication link between a first router located on the local site and a second router located on the remote site;
 - means for using the communication link between the first and second routers to establish communication between the debugging system and the virtual machine;

means for receiving a timestamp indicating when the remote application was last modified at the remote site;

means for determining, based on receiving the timestamp, whether a local copy of the remote application is present on the local site;

means for retrieving, if it is determined that the local copy is not present on the local site, the local copy from the remote site;

means for determining, based on receiving the timestamp, whether more than one local copy is stored on the local site;

means for selecting a matching local copy from the more than one local copy based on the received timestamp;

means for using the received timestamp to determine that determining whether the local copy is not is up to date with respect to the remote application based on the received timestamp; application; and

means for determining, if it is determined that the local copy is not up to date, (i) comparing, on the remote site, the local copy as originally downloaded with the remote application to establish delta information that identifies differences between the local copy as original downloaded with the remote application and the modified remote application, application, (ii)

means for retrieving, if it is determined that the local copy is not up to date, the delta information from the remote site, site, (iii)

means for using, if it is determined that the local copy is not up to date, the retrieved delta information to alter the local copy to match the modified remote application, and application, and (iv)

means for loading the retrieved, matched or altered local copy into the debugging system; and

means for debugging, using the communication link between the first and second routers, the loaded local copy of the remote application at the local site, further comprising:

means for sending commands from the local site to the remote application between the first and second routers, and

means for receiving, via the first and second routers, run-time data and state information about the remote application at the local site based on sending the commands.

15. (Original) The system of claim 14, wherein the remote application is a component of a larger application that is running on the virtual machine.
16. (Original) The system of claim 14, wherein the virtual machine is a Java virtual machine.
17. (Original) The system of claim 14, wherein the at least one firewall comprises a first firewall protecting the local site and a second firewall protecting the remote site.
18. (Original) The system of claim 14, wherein the router is an SAProuter.
19. (Cancelled)
20. (Cancelled)
21. (New) The method of claim 1, further comprising changing a run mode of the modified remote application from a normal mode to a debugging mode.
22. (New) The method of claim 1, wherein communication between the debugging system and the virtual machine is established with the modified remote application remaining in a normal mode, and not a debugging mode.
23. (New) The method of claim 1, wherein the communication link is established using shared memory.